I. PURPOSE AND NEED

A. INTRODUCTION

Surface coal mining in the Appalachian coalfield states of Kentucky, Tennessee, Virginia, and West Virginia is conducted by a variety of mining methods and in different topographic settings. For the purposes of this EIS, "mountaintop mining" considers all types of surface coal mining (mountaintop removal, contour, area, etc.) in the steep terrain of the central Appalachian coalfields. Removal of overburden and interburden (rock above and between coal seams, respectively) during mountaintop mining / valley fills (MTM/VF) operations results in generation of excess spoil, because the broken rock will not all fit back into the mining pit. The excess spoil must be placed in disposal sites adjacent to the mining pits in order to allow for efficient and economical coal extraction. Typical locations for excess spoil disposal sites are valleys, also known as heads-of-hollows or uppermost (headwater) stream reaches. The usual method of disposing of this excess spoil is to place it in engineered earthen and rock structures known as excess spoil disposal areas or colloquially known as head-of-hollow fills, hollow fills or valley fills. Detailed information on the environmental resources in the EIS study area and coal mining methods is contained in Chapter III.

A number of Federal and state agencies regulate MTM/VF under the authority of several different statutes. An explanation of these programs and description of the requirements of applicable laws and regulations can be found in the No Action Alternative discussion under each issue in Chapters II.B and II.C. and Appendix B.

The Office of Surface Mining (OSM) is responsible for the national administration of SMCRA and has delegated this authority to states in the EIS study area except Tennessee. Delegation of SMCRA authority occurs when states assume primacy for regulating surface coal mining and reclamation by adopting statutes and regulations no less effective than the Federal counterparts. Subsequent changes in the Federal SMCRA program may result in changes to states' SMCRA provisions when required in order to retain primacy. The U.S. Army Corps of Engineers (COE) and the U.S. Environmental Protection Agency (EPA) share responsibility for implementing different portions of the Clean Water Act (CWA). The COE has the principal authority to regulate the placement of fills into waters of the U.S. under CWA Section 404 while EPA maintains oversight authority. The COE authorizes such fills by General Permit (GPs), such as Nationwide Permit (NWPs), for projects that individually or cumulatively have only minimal adverse effects on the aquatic environment or by an individual permit (IP) for projects that have more than minimal adverse effects.

The states in the EIS study area, through programs approved by EPA, implement the National Pollutant Discharge Elimination System (NPDES) established under CWA Section 402. The states also certify that Federally-authorized CWA Section 404 projects do not violate state water quality standards (CWA Section 401). As a signatory to the December 1998 settlement agreement, West Virginia (through the West Virginia Department of Environmental Protection (WVDEP)) is participating with the Federal agencies as a co-lead agency in the preparation of this EIS. WVDEP administers the SMCRA, CWA Section 401, and CWA Section 402 responsibilities within West Virginia.

The Endangered Species Act (ESA) is administered by the U.S. Fish and Wildlife Service (FWS) through consultation on actions by Federal agencies and coordination with state agencies. In addition, the Fish and Wildlife Coordination Act (FWCA) pertains to Federally-controlled water development projects and land development projects that affect any water body. Whenever OSM, COE, or EPA authorizes an action within the scope of the FWCA, they consult with the FWS and counterpart state agencies to obtain recommendations on ways to mitigate adverse effects on fish and wildlife resources.

B. PROPOSED ACTION

The COE, EPA, and the OSM propose to establish an integrated surface coal mining regulatory program in steep slope Appalachia. The objective of the coordinated program improvements considered by this EIS is consonant application of the Clean Water Act (CWA) and the Surface Mining Control and Reclamation Act (SMCRA) to improve the regulatory process and effect better environmental protection for mountaintop mining and valley fill (MTM/VF) operations.

To effect this integrated regulatory program, the COE, EPA, and OSM would amend their policies, guidance, procedures, or regulations as necessary. These amendments would result in MTM/VF operations that avoid, minimize, or mitigate, to the maximum extent practicable, significant adverse impacts to the waters of the U.S. and prevent material damage to water resources outside the permit area; would streamline the permitting process; and would coordinate the agencies' respective programs. Coordinating these regulatory programs would aid in balancing the nation's need for energy with the need to conserve environmental resources that could be adversely affected by MTM/VF operations in the steep slope Appalachian coalfields. The joint CWA and SMCRA program changes envisioned would address the following, as applicable:

- More detailed and consistent mine planning and reclamation;
- Clearer regulatory definitions;
- Guidance on best management practices;
- Comprehensive baseline data collection;
- Data analysis to determine feasibility of impact thresholds;
- Standards for alternative analyses, impact predictions, and impact avoidance and minimization considerations; and
- Suitable levels of compensatory mitigation for unavoidable impacts.

C. PURPOSE OF THE EIS

The Notice of Intent to prepare this Draft EIS was published in the Federal Register, dated February 5, 1999 and posted on EPA's mountaintop mining web page [64 FR 5778; http://www.epa.gov/region3/mtntop/documents/html]. As stated in this Notice, the purpose of this EIS is "to consider developing agency policies, guidance, and coordinated agency decision-making processes to minimize, to the maximum extent practicable, the adverse environmental effects to waters of the Unites States and to fish and wildlife resources affected by mountaintop mining operations, and to environmental resources that could be affected by the size and location of excess spoil disposal sites in valley fills."

This EIS focuses on steep-slope Appalachian surface coal mining and excess spoil disposal, although waters of the U.S. in other parts of the country are also filled by mining activities, including underground coal mining practices such as "face-up" fills, waste rock fills, and coal mine waste from coal preparation (embankments and impoundments). Coal mining activities involve temporarily or permanently diverting waters of the U.S. into engineered channels for various reasons, including mining coal beneath streams. As discussed in section I.F., litigation, NEPA scoping, and agency experiences emphasized the critical need to evaluate these matters for Appalachian steep slope mining. The agencies assumed, for the purposes of this Draft EIS, that impacts in the study area would probably be at least as significant as impacts in other areas, and that the measures to address these impacts for the study area would be adequate for other areas as well. Following the conclusion of the NEPA process for the issues addressed, the need for additional evaluation would be assessed relative to other coal mining activities affecting jurisdictional streams.

A further purpose of this EIS to evaluate the various laws, regulations, policies, guidelines, and processes to determine if gaps in implementation and data exist or more protective requirements are needed. This EIS evaluates environmental impacts associated with these operations on water quality, streams, aquatic and terrestrial habitat, habitat fragmentation, the hydrological balance, and other individual and cumulative effects. Federal and state agencies initiated a number of studies as part of this EIS to address gaps in data regarding MTM/VF.

Other results of this EIS include the following. The EIS provides information that would help the agencies improve the permitting process to protect water quality and minimize impacts on other environmental resources. The EIS also examined the coordination and implementation of the regulations of the agencies. The EIS considers information on the following: the cumulative environmental impacts of mountaintop mining; the efficacy of stream restoration; the viability of reclaimed streams compared to natural waters; the impact that mining and associated fills have on aquatic life, wildlife and nearby residents; biological and habitat analyses that should be done before mining begins; practicable alternatives for in-stream placement of excess overburden; measures to minimize stream filling to the maximum extent practicable; and the effectiveness of mitigation and reclamation measures.

D. NEED FOR PROPOSED ACTION

Interagency evaluations of regulatory program requirements, issues raised in litigation, technical study results, and concerns expressed by stakeholders during scoping, all of which are described in this and subsequent sections, support the need for government action to improve the MTM/VF regulatory process and minimize impacts of MTM/VF operations. A number of issues related to interpretation, coordination, consistency, and areas of overlap were found in permitting, reclamation, and oversight programs being implemented by the CWA and SMCRA agencies. For example:

- COE, EPA, and judicial interpretations of whether proposed activities would result in a "discharge of fill material" demonstrated the need for national consistency. While this issue is related to and discussed in this EIS, the COE and EPA proposed and finalized a rule independent of the EIS to promote clearer understanding and application of the CWA regulatory program. [65 FR 21294–95 and 67 FR 31129-43].

- OSM has not viewed, applied, or enforced the stream buffer zone (SBZ) regulation to prohibit mining activities within the buffer zone, if those activities would have less than a significant effect on the overall chemistry and biology of streams, i.e., the overall watershed or stream below the activity. While some have interpreted the SBZ rule to prohibit excess spoil fill construction in intermittent and perennial streams, to do so would counter other SMCRA provisions recognizing the necessity of excess spoil fills. These polarized interpretations illustrate needed clarification of the OSM SBZ rule.

- The typical sequence and timing between issuance of the SMCRA permit, the CWA Section 401 Certification, and CWA Section 402/404 permits are described in Chapter II.C.1.a. Sequence and timing issues for these different permits are of concern to applicants, the agencies, and other stakeholders. Under NWP 21, COE Districts receive MTM/VF mining applications after the company has obtained the necessary SMCRA permit. The case-by-case determinations by the COE on the applicability of the NWP could result in redesign of the MTM/VF project and require re-submission of revisions to the SMCRA authority. This independent treatment of the applicant by different agencies characterizes the opportunity for closer coordination to better integrate the regulatory programs, maximize environmental protection, minimize review time and lessen the need for project revision and multiple reviews by any agency.

- The CWA, SMCRA, and selected state stream definitions, protocols, and monitoring requirements take different approaches to evaluate headwater streams, aquatic resources, and related functions. The programs employ certain analyses and protections based, in part, on the type and character of a stream segment. Also, the fact that each program typically requires a field visit and stream reconnaissance for applying these varied approaches illustrates the potential for duplication of effort by the regulatory agencies, applicants, and stakeholders. Use of many approaches may lead to confusion, uncertainty, and duplication of effort for regulation of headwater streams. This indicates the need for Federal and state authorities, working with stakeholders, to establish science-based methods for definition and delineation of stream characteristics and impacts.

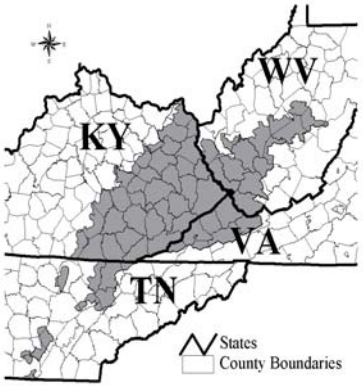
- A variety of CWA criteria and programs operate to maintain and restore water quality and aquatic resources. Collection of background aquatic data, impact predictions, and monitoring are fundamental to accomplishing CWA program goals. SMCRA is similar in this regard and, along with data generated in CWA implementation, these programs provide extensive information useful for impact determinations. Because these data are collected by different agencies using different methods for different purposes, the information is not usually viewed in an integrated fashion. With automated data processing and geographic information systems, data integration is feasible and could lead to a clearinghouse for use in satisfying multiple program goals by applicants, the public, and regulatory agencies.

- There are many models, equations, and procedures for assessing peak runoff that are dependent on site-specific factors such as geology, hydrology, topography and

precipitation. A standardized methodology addressing flooding potential has not been identified by the COE or OSM as applicable for CWA or SMCRA applicants. However, guidelines on calculating peak discharge, evaluating flooding potential, and minimizing flood potential would benefit applicants, regulatory authorities, and improve flooding analysis and reduce potential for impacts to residents and property downstream of MTM/VF.

These brief descriptions of issues support the need for better coordination in implementation of the CWA and SMCRA in permitting of MTM/VF. The issues are discussed in detail in Chapter II.C.

E. STUDY AREA



The study area is located within the Appalachian Coalfield Region of the Appalachian Plateau physiographic province and Bituminous Coal Basin. Consistent with the EIS purpose, the study area boundary within this region was established to include watersheds where excess spoil fills, otherwise known as valley fills, have been constructed or are likely to be constructed in the future. The resulting study area boundary encompasses approximately 12 million acres and extends over portions of West Virginia, Kentucky, Virginia, and Tennessee [Figure I.E]. The study area is described in detail in Chapter III.A.

Figure I-E Study Area

F. CHRONOLOGY OF ISSUES

1. 1997-1999 Chronology

Increased public and government agency concern about MTM/VF operations emerged in 1997 and 1998. It appeared that the number of these types of operations had increased in recent years in Appalachia, and that more and more valley fills were being proposed/built. However, based on information contained in the Fill Inventory conducted for this EIS [Chapter III.K.] there were an average of 558 valley fills per year approved in the EIS study area for the five-year period of 1985-1989; an average of 399 valley fills/year approved during the period 1990-1994 (a 28% reduction from the 1985-1989 period); and, an average of 315 fills/year approved in the four year period (1995-1998) before the start of preparation of this EIS in early 1999 (a 44% reduction from the 1985-1989 period and a 21% reduction from the 1990-1994 period). However, while the average number of fills per year had decreased, a comparison of the fills constructed in the period 1985-1989 with those constructed in 1995-1998 showed that the average fill increased in size by 72 percent, and the average length of stream impacted per fill increased by 224 percent.

a. Federal Activities

Concerned about impacts to fish and wildlife habitats, the FWS initiated an informal inventory in 1997 of stream impacts resulting from valley fills and sediment ponds in West Virginia, Virginia, and Kentucky. Also in 1997, EPA, COE, OSM, and FWS began meeting to discuss MTM/VF through an EPA Region III forum called the Federal Regulatory Operations Group. In November 1998, the agencies signed a "Statement of Mutual Intent," agreeing to study the impacts from and regulatory controls on MTM/VF. This evaluation plan stated the following:

> *"1. Assessing and documenting the cumulative environmental impacts of fills since the permanent regulatory program under the Surface Mining Control and Reclamation Act was implemented in each state, and estimate the extent of future impacts. This assessment will consider effects on water quantity and quality, and aquatic and terrestrial habitats–both under the footprint of the fill and downstream. The assessment will also consider final reclamation results and the success of any mitigation requirements, both on and off site.*
>
> *2. Assess the individual and cumulative effects of valley fills and the associated mining disturbance on downstream flooding potential;*
>
> *3. Review mitigation practices utilized in various States;*
>
> *4. Assess long-term stability of fills with emphasis on safety issues; and*
>
> *5. Document existing federal and state laws and regulations and current regulatory practices. This will include relevant provisions of the Clean Water Act, as well as consideration of the utilization of the provisions of the Surface Mining Control and Reclamation Act requiring operators to complete a probable hydrologic consequences determination, and the state regulatory agency to complete a cumulative hydrologic impact assessment."*

As a result, plans for a fill inventory; stream impact study; flooding study; mitigation practices study; fill stability study; and a review of the interplay of federal laws and regulations were developed. In addition, OSM initiated an oversight evaluation in 1998 of how the SMCRA delegated programs in Kentucky, Virginia, and West Virginia were approving coal mines that proposed to not restore to approximate original contour (AOC), a practice that can result in more numerous and larger valley fills. The oversight studies, including the findings and action plans can be found at http://www.osmre.gov/mtindex.htm.

b. WV Governor's Study

In June 1998, West Virginia's then-Governor Cecil Underwood created the "Task Force on Mountaintop Mining and Related Practices" to study the effects of MTM/VF. The task force was organized into three committees: 1) Impact to the Economy; 2) Impact on the Environment; and 3) Impact on the People. The findings of the task force were published in December 1998. The Task Force recommendations included the following:

- The need for more research on the environmental and economic effects of MTM/VF;
- Establishment of a state office to regulate the impact of mountaintop removal mining on people;
- Establishment of a nationwide stream mitigation policy;
- Discontinuation of "fish and wildlife habitat" as a post-mining land use (PMLU);
- Development of commercial forest land as a preferred PMLU;
- Rigorous enforcement of existing regulatory requirements, including water quality and approximate original contour (AOC) guidelines; and,
- Examination by the legislature of whether public values compel restrictions on the degree of alteration of the landscape and the environment with regard to large-scale MTM/VF operations.

c. Litigation

c.1. *Bragg v. Robertson*

In July 1998, the West Virginia Highlands Conservancy and several citizens filed a lawsuit against the West Virginia Department of Environmental Protection (WVDEP) and the COE (*Bragg v. Robertson*., Civ. No. 2:98-0636 S.D. W. Va), alleging that valley fills associated with surface coal mining operations resulted in the loss and degradation of West Virginia streams, and that CWA and SMCRA were being improperly applied.

c.2. Clean Water Act Allegations

Specifically, plaintiffs contended that CWA Section 402 rather than CWA Section 404 was the regulatory program governing disposal of excess spoil, largely over confusion resulting from differing definitions of "fill" in EPA and COE regulations. See Appendix B for a more detailed explanation of the CWA Section 402 and Section 404 programs. The plaintiffs also argued that if the CWA Section 404 did apply, then valley fills both individually and cumulatively caused more than a minimal impact to "waters of the U.S.," and consequently were not eligible for COE authorization via a NWP. In addition, the plaintiffs alleged that the COE violated the National Environmental Policy Act (NEPA) by failing to analyze the adverse and cumulative environmental impacts of valley fills and surface mining activities in West Virginia.

c.3. SMCRA Allegations

Several *Bragg* counts centered around the alleged failure of WVDEP to satisfy requirements of its SMCRA program including the following:

- enforcement of the stream buffer zone downstream of valley fills and sediment control structures;
- measurable demonstrations that approximate original contour (AOC) were attained, minimizing excess spoil and stream impacts;
- specific findings in permits on AOC variances and other areas involving post-mining land uses (particularly establishing commercial forestry standards; allowing donation of reclaimed "homesteading" tracts; and disapproval of undeveloped recreational uses to justify AOC variances);

- hydrologic reclamation plan;
- contemporaneous reclamation provisions;
- establishing a quality control advisory committee to evaluate application approvals; and,
- securing certain technical disciplines as staff for permit application evaluation.

The plaintiffs in *Bragg* also contended that the practice of valley filling violates the SMCRA "stream buffer zone rule" [30 CFR 816.57], which restricts surface mining operations within 100 feet of an intermittent or perennial stream.

c.4. *Bragg* 1998 Settlement

In December 1998, the plaintiffs, Federal agencies, and WVDEP agreed to settle the CWA portion of the case, based on a general agreement that the CWA Section 404 regulatory framework was the appropriate regulatory control for authorization of valley fill construction in West Virginia. The settlement agreement required the agencies to:

> "enter into an agreement to prepare an Environmental Impact Statement ("EIS") on a proposal to consider developing agency policies, guidance, and coordinated agency decision-making processes to minimize, to the maximum extent practicable, the adverse environmental effects to waters of the United States and to fish and wildlife resources affected by mountaintop mining operations, and to environmental resources that could be affected by the size and location of excess spoil disposal sites in valley fills."

The settlement agreement established interim guidelines (pending completion of this EIS) for the evaluation of MTM/VF permit applications in West Virginia, and required the agencies to enter into a Memorandum of Understanding (MOU) to establish an interagency coordination process "to ensure compliance with all applicable Federal and state laws and guidance, improve the permit process, and minimize any adverse environmental effects associated with excess spoil created by mountaintop mining operations in West Virginia," thereby accomplishing a stated goal of "coordinated permit decisions that minimize adverse environmental effects." The evaluation and resultant study plans developed under the 1998 Statement of Mutual Intent subsequently became part of the effort to prepare this EIS [Chapter I.C.2.b.]. These efforts were assimilated by the Federal agencies into the initial NEPA process for this EIS beginning in early 1999 to describe the affected environment and identify areas where programmatic improvements and better coordination could occur, ultimately resulting in enhanced environmental protection under the Federal laws.

The *Bragg* settlement thus described a CWA Section 404 framework for mining proposals in West Virginia, establishing, as a general matter, a minimal impact threshold where valley fills are located in watersheds less than 250 acres. The COE can exercise its discretion (based on site-specific aquatic conditions) to require an individual permit (IP) on any project in watersheds less than 250 acres or authorize valley fills in watersheds greater than 250 acres under Nationwide Permit 21 (NWP 21). NWP 21 is a general permit authorizing fills in waters of the U.S. associated with surface coal mining and reclamation operations, provided the coal mining activities are authorized by OSM or states with approved programs. The COE also evaluates whether multiple valley fills on a project, or multiple mining proposals in a particular watershed, exceed the minimal impact

threshold and thus require an IP review. IPs are more extensively-reviewed CWA Section 404 permits that require NEPA, public interest, cumulative and secondary impact analysis as well as broader interagency consultation and public participation.

As mentioned above, to aid in the objective of increased scrutiny of permits, the Federal agencies, and WVDEP signed a Memorandum of Understanding (MOU) for the "Purpose of Providing Effective Coordination in the Evaluation of Surface Coal Mining Operations Resulting in Placement of Excess Spoil Fills in the Waters of the United States" which established a process for improving coordination in the review of permit applications. The signatory agencies entered into the agreement with the goals of enhancing cooperation and communication in order to ensure compliance with all applicable Federal and state laws, improving time lines and predictability of the permit process, and minimizing adverse environmental impacts from surface coal mining operations resulting in placement of excess spoil fills in the waters of the U. S. The experience of the agencies resulting from the increased permit scrutiny have been considered in the development of this EIS. Many of the efforts in this so-called "interim permitting" period identified areas where the agencies, the regulated community, and the environment would benefit from coordinated or clarified procedures, better baseline data collection, improved analysis of potential impacts, and a different sequence of processes.

c.5. 1999 Consent Decree

In 1999, WVDEP entered into a Consent Decree following discussions with the plaintiffs on issues in the Bragg counts regarding the state implementation of the delegated SMCRA program. The stream buffer zone violation was not addressed as part of either the 1998 settlement agreement or WVDEP Consent Decree and was subsequently briefed by parties and reviewed by the Federal district court.

c.6. 1999 *Bragg* decision

In October 1999, the southern Federal District Court in West Virginia ruled on the disposition of the SMCRA-related count concerning stream buffer zones. The court ruled that valley fills could not be located in intermittent or perennial stream segments without violating the OSM stream buffer zone regulation at 30 CFR 816.57 [Bragg, et al. v. Robertson, Civ. No. 2:98-0636 S.D. W. Va.]. The decision was appealed to the 4th Circuit by the Federal government and West Virginia. The outcome of the appeal is described below in I.F.3.b.1.

3. 2000-2003 Chronology

Following the permitting changes instituted pursuant to the *Bragg* settlement agreement and other unrelated factors, the average number of fills/year approved in the EIS study area declined from the average of 396 fills/year (1985-1998) to 217 fills/year (1999-2001). Average stream impacts also decreased to 0.137 miles/fill during the three-year period (1999-2001) after the Bragg settlement compared with the 0.207 stream miles/fill for the four-year period before the settlement agreement. The cumulative change following implementation of the interim permitting process was a reduction by half of the total stream miles of impacts approved during 1999-2001 (30 miles) versus the average number of miles approved in the previous four years (1995-1998, 63 miles). Similarly, 3,016 acres of fill in 26,570 acres of watershed were approved between 1999 and 2001, while 5,168

acres of fill in 15,733 watershed acres were approved between 1995 and 1998. These data are derived from the valley fill inventory prepared for this EIS [Chapter III.K].

a. Revision to Definition of "Fill Material" under CWA Section 404 and Issuance of Revised NWPs

Some of the legal arguments on CWA applicability to valley fills occur because the EPA and COE historically defined "fill" (i.e., materials to be placed in waters of the United States that are under CWA 404 jurisdiction) differently. The COE applied a "primary purpose test," that is, material was considered to be fill when it was placed in waters of the U.S. for a purpose, such as to create dry land for a construction site. The EPA considered the "effects test" to determine CWA Section 404 jurisdiction, i.e., if fill had the "effect" of creating dry land or changing the bottom elevation of a stream. The differences in the "fill" definitions that arose in *Bragg* and other COE/EPA litigation unrelated to coal mining were resolved through joint rule making started in 2000. EPA and the COE proposed a rule that would harmonize these definitions with the EPA "effects test." This rule was finalized in May 2002, clearly specifying that "overburden from mining"is fill regulated by CWA Section 404 [67 FR 31129-31143]. While this regulatory action is related to issues analyzed by this EIS, the rule making was independent of this EIS development.

As discussed briefly above, under the CWA Section 404 program, the COE can consider issuing permits to convert portions of waters of the U.S. to dry land, provided that the proposal is in compliance with the Section 404(b)(1) Guidelines. There are several types of permitting actions available to the COE to authorize these activities. The COE may use a general permit review process (such as regional or NWP) or a more-involved IP process. The NWP process is reviewed and revised as necessary by the COE every five years. In February 2002, the COE re-issued all NWPs [67 FR 2020-95]. NWP 21, applicable to coal mining activities authorized by a SMCRA permit, was revised to address some of the interim permitting issues identified. The new NWP 21 requires a case-by-case evaluation of valley fill impacts to determine which CWA Section 404 permitting process is most appropriate, and provides for mitigation of unavoidable aquatic impacts to assure that significant degradation will not occur.

b. Litigation

b.1. *Bragg v. Robertson*

The *Bragg* settlement agreement resulted in an MOU for agency collaboration on SMCRA and CWA application review where mining proposals included valley fills. The Federal agencies and WVDEP began concurrently evaluating mining proposals, both informally before application and formally after application. WVDEP required additional information in the application and performed reviews similar to those required by the CWA Section 404(b)(1) Guidelines in order to make SBZ findings required under SMCRA. OSM provided additional technical staff to assist WVDEP in application review. The COE based CWA Section 404 reviews on the SMCRA application and any additional data necessary to satisfy the NWP or mitigation requirements.

WVDEP implemented the terms of the *Bragg* consent decree, preparing guidelines, policies and regulations to address the issues presented above. In 2001, the Fourth Circuit Court of Appeals held that claims by the plaintiffs against West Virginia were barred by the Eleventh Amendment of the

U.S. Constitution. [248 F.3d 275 (4th Cir. 2001)]. The Circuit Court found that the stream buffer zone rule, like all requirements adopted by West Virginia under its authorized SMCRA program, become requirements of state law. The Fourth Circuit vacated the district court's decision in this case and plaintiff's claims were accordingly dismissed by the district court. From 2000 to the present, preparation of this EIS continued as provided in the *Bragg* litigation settlement as described above.

b.2. *KFTC v. Rivenburgh*

A case filed in 2002 by Kentuckians for the Commonwealth (KFTC) against the COE, also in the southern Federal district court in West Virginia, focused on CWA issues similar to those in *Bragg* (*KFTC v. Rivenburgh*, Civil Action No. 2:01-0770 (S.D. W.Va. 2002)). The court held that the COE lacked statutory authority under the CWA to issue Section 404 permits for waste material (*KFTC v. Rivenburgh*, 204 F. Supp. 2d 927, enjoined modified (S.D. W.Va. 2001)). The District Court stated that the joint COE/EPA final "fill rule" was ultra vires, beyond the authority of the COE under the CWA. The court enjoined the COE from issuing CWA Section 404 permits within the Huntington (WV) District where any fills proposed in waters of the U.S. had no "constructive purpose." This injunction, which applied prospectively, generally limited COE authorization of MTM/VF in southern West Virginia and eastern Kentucky. The court ruling had no effect on MTM/VF CWA Section 404 permits in the rest of Kentucky, Tennessee or Virginia. The government appealed the decision to the Fourth Circuit Court.

On January 29, 2003, the Fourth Circuit vacated the district court's decision in *KFTC*, in part, on the grounds that the injunction was overly broad. While the plaintiffs made allegations only with respect to a particular mine, the district court's injunction broadly applied to any coal mining or other fill activities throughout the Huntington District of the COE, which covers parts of five states. In addition, because the agencies' revised joint definition of fill material of 2002 was never before the district court, the court of appeals also vacated the district court's declaration that the agencies' regulation exceeded the agencies' authority under the CWA. According to the court of appeals, the sole issue was whether the COE authorization of the Martin County Coal Mine valley fills was valid under its 1977 regulations and the statute. The court of appeals found that regulating valley fills was consistent with both the regulation and the statute, rejected the district court's conclusion that the statute only authorized issuance of permits under CWA Section 404 for "beneficial" fills, and held that neither the statute nor the 1977 regulation prohibited the COE from authorizing valley fills for waste disposal purposes under CWA Section 404.

G. SCOPING AND PUBLIC INVOLVEMENT

1. Public Participation

Public participation was actively sought in the development of this EIS. The Notice of Intent for the EIS was published in the Federal Register, dated February 5, 1999 [64 FR 5778] and posted on the MTM/VF web site. The agencies invited comments and suggestions on the scope of the analysis, including the regulatory issues and significant environmental effects to be addressed in the EIS. Public meetings as well as meetings with citizen groups and mining industry groups were held to engage the stakeholders and other interested parties.

a. Public Meetings

Scoping meetings were held in Summersville, Charleston, and Logan, West Virginia, on February 23, 24, and 25, 1999, respectively. Many people took advantage of the opportunity to participate in these public meetings. The public was also invited to provide written comments. Verbal statements were made by 641 individuals at the public meetings while 95 provided written comment letters.

Concerns expressed in these public scoping meetings described economic and social impact issues, policy and regulatory review issues, EIS process questions, and a broad range of environmental impacts associated with MTM/VF operations. A summary of the concerns and issues expressed during the scoping process is presented in the MTM/VF EIS Bulletin 1, dated May 1999. This bulletin, and other information on the EIS, can be reviewed by accessing the Mountaintop Mining homepage at www.epa.gov/region03/mtntop/.

b. Meetings with Citizen Groups

A meeting was held December 13, 1999 at the WVDEP Office in Nitro, West Virginia. Invited citizen groups included the West Virginia Highlands Conservancy, Ohio Valley Environmental Coalition, West Virginia Organizing Project, Citizen's Action Group, West Virginia Environmental Council, and Mountain State Justice.

A meeting with citizen groups was held December 15, 1999 at the Kentucky DNREP Office in Prestonsburg, Kentucky. Invited citizen groups included the Kentucky Resource Council, Kentuckians for the Commonwealth, and Citizen's Coal Council.

c. Meetings with Coal Mining Industry Groups

A meeting with mining industry groups was held January 6, 2000 at the Kentucky DNREP Office in Prestonsburg, Kentucky. Invited mining industry groups included Kentucky Coal Association, Small Coal Operators Advisory Board, Coal Operators and Associates, and Knott/Perry/Letcher Coal Operators Association.

A meeting with mining industry groups was held December 14, 1999 at the WVDEP Office in Nitro, West Virginia. Invited mining industry groups included the West Virginia Mining and Reclamation Association and the West Virginia Coal Association.

2. Issues Raised During the Scoping Process

Issues of concern expressed during the scoping process have been summarized and organized into the following aquatic, terrestrial, and community impact issues.

a. Direct Stream Loss

Comments expressed concerns related to stream loss and associated secondary or cumulative effects. The following are excerpts from a aquatic resource-related comments.

"The EIS should determine the immediate, long term and cumulative effect of stream losses due to valley fills and watershed vegetational alterations to aquatic ecosystems. In addition, the study should determine how energy budgets, water quality, and water quality downstream of buried streams compare to a stream that has no headwaters filled."

"Sufficient biological data are not presently available to characterize the importance of headwater streams. In addition, the data that is available is unreliable. New biological studies are needed to generate this data."

"Already we have lost hundreds of miles of streams to valley fills."

b. Stream Impairment

Other comments expressed concerns related to water quality and associated biotic effects. The following are excerpts from aquatic resource-related comments.

"Research should be conducted on the ecological function of head-of-hollow streams, and their role and significance in preserving the quality and quantity of water downstream."

"What are the regulatory limitations on valley fills in terms of state water quality standards? How can valley fills be consistent with anti-degradation requirements under the Clean Water Act?"

"What are the short- and long-term effects of sediment runoff downstream from mountaintop removal operations?"

"Not only is the chemical quality of the water affected by the condition of the headwater areas, but the complex food webs and life cycles of stream organisms are dependent on use of these critical areas."

"Seasonal benthic surveys should be conducted to determine potential immediate and long-term, and cumulative impacts of valley fills, caused by area mines, mountaintop removal or other surface mine activities."

c. Fill Minimization

Statements provided during scoping of this EIS express concern related to fill minimization. The following are excerpts from comments received.

"There is a need for clear and concise rules on maintaining the Approximate Original Contour (AOC) at both the permitting and reclamation state of mine operations. I urge tighter regulations on AOC, that assures binding long term compliance by states. There is tremendous variability in the West Virginia program, which requires more oversight by Federal agencies responsible for implementation of the Surface Mine Control an Reclamation Act (SMCRA)."

"An EIS should determine the viability of other alternatives of disposal of 'overburden' in valleys where mountaintop removal and area mining is conducted."

d. Assessing and Mitigating Stream Habitat and Aquatic Functions

Statements provided during scoping of this EIS indicate that wetland habitats and functions are being created on reclaimed mine sites either purposely or as the result of the construction of erosion and sediment controls. This issue addresses the ability of reclamation practices to restore stream habitat and aquatic functions impacted by MTM/VF and the effectiveness of mitigation. The following are excerpts from comments received.

"Cattail wetlands have an important place in mine reclamation. But they are just one type of wetland. There are other types that should be encouraged on backstacked areas to increase productivity, water quality, and biodiversity."

"I request the EIS address the following concerns/issues…the likelihood of reclaiming mined sites to their original ecology."

Comments indicated that valley fills increase base flow to streams. The following are excerpts.

"From what I have seen in my 28 years of mining experience, the valley fills created due to surface mining makes the downstream more productive for aquatic life because the valley fills act as water reservoirs and provides a reliable stream of water downstream - without valley fill the stream might dry up in extremely dry weather."

"The experience of the industry is that once valley fills are completed and hydrologic balances reach equilibrium, peak flows after large storm events are reduced and base flows actually increase even over extended periods of dry weather. The net effect is that stream segments that were once ephemeral and that supported only sporadic benthic life before mining, now flow perennially and support benthic life throughout the year."

Comments made during the public scoping process addressed the effectiveness of compensatory mitigation. Comments ranged from suggesting that there is no way to mitigate for or replace the streams or habitat lost to suggesting that significant aquatic resource benefits have resulted from compensatory mitigation projects. This issue evaluates the effectiveness of compensatory mitigation projects to make up for loss of stream habitat and aquatic functions. The following are excerpts.

"It is our observation that many cumulative miles of streams have been covered/destroyed without any mitigation."

"Mitigation measures may be more public relations than substance."

"It seems highly improbable that proper mitigation has been conducted..information should include whether or not the mitigation occurred on or off-site and whether or not mitigation was appropriate and compensatory. This study should also determine

how much follow-up activity occurs to see whether or not mitigation has been successful."

"Eliminate the arbitrary 200 acre mitigation requirement for valley fills. Watersheds as small as 20 acres contain valuable water dependent ecosystems, and should be considered for mitigation."

e. Cumulative Impacts

Statements provided during scoping of this EIS express concern regarding cumulative effects from MTM/VF activities. The following excerpts are provided. The analysis of cumulative impacts covers both aquatic and terrestrial resources.

"Mountaintop mining and valley fill permits should no longer be issued on an individual basis without first considering the cumulative impacts on the watershed. Coal companies should be required to conduct pre-mine environmental habitat assessments for each permit in relation to the impacts of the mine project on the biota of the individual watershed . Habitat Assessments would include qualitative and quantitative information on aquatic and terrestrial resources."

"How does mountaintop removal affect biodiversity of terrestrial plants and animals in the region?"

"The EIS should quantify the current cumulative losses and future potential losses of acres of terrestrial habitat as a result of mountaintop mining, area mines and other surface mining activity as well as the actual losses of miles of streams caused by valley fills."

"The full impact of valley fills, both on the micro scale and on the macro or landscape/ecosystem scale, must be studied and known....We need to look at the overall picture for the area at risk. This requires identification of where any MTR mining might be expected for the present and for the future. It means looking beyond the confines of a given permit application. We need to understand the long-term cumulative impact if 30-40% of the mountains in some areas are stripped and leveled."

f. Deforestation

Statements provided during scoping of this EIS express concern over deforestation or forest fragmentation and its effect on plants and wildlife. The following are excerpts.

"The EIS should determine the extent to which WV's valuable hardwood forests are becoming fragmented and what immediate, long-term and cumulative impacts fragmentation has upon fauna."

"West Virginia has remained a strong hold for species like: Cerulean warbler, Worm-eating warbler and Scarlet tanager because of large areas of relatively unbroken forest where a diverse ecosystem survives. Mountain top removal as a

mining practice is not compatible with the maintenance of healthy habitats for wildlife!"

"Latta and Baltz (1997) indicate that fragmentation of breeding bird habitat can have profound effects on reproductive success of avian species. They further state that fragmentation can cause insularization effects, increased nest predation, increased nest parasitism by Brown-headed Cowbirds, and decreased pairing success. In many cases, these effects may be sufficient to cause local declines in bird populations. Other species, such as salamanders, may be heavily impacted by forest removal and fragmentation due to their requirements for moist habitats."

"Robinson (1998) presents a concise overview of the linkage between neotropical migrants and forest fragmentation. Villard (1998) addressed the subject of forest-interior species and area-sensitive species. The importance of contiguous forest land has been directly studies for a variety of avian species. Recent examples include the Scarlet Tanager (Roberts and Norment, 1999) and Wood Thrush (Weinberg and Roth, 1998). It would seem imperative, given the wealth of evidence on the detrimental effect of forest fragmentation on avian species that the environmental impact of mountaintop removal be thoroughly examined. Baseline data on the occurrence of breeding neotropical migrants at specific sites should be collected to assess possible impacts."

g. Blasting

The following are excerpts from comments related to blasting made during the EIS scoping process. The issue is the effects of MTM/VF on communities, homes, water wells, and quality of life.

"Objective research into the effects of mountaintop mining blasting on groundwater hydrology and quality is needed. The evaluation of effects is complicated by the fact that many of the mining areas are underlain with extensive old mine works. A study must be done on the effects of blasting on structures such as houses, churches, farms, water, and sewer lines, etc. Minimum distances from property and wells should be based on science and standards should be set for the adequate prevention of damage."

"Many residents whose homes are near proposed or active surface mining sites opt to move or are bought out by the coal companies. Those that refuse to leave are subjected to noise, dangerous fly-rock, potential harm to health from breathing dust, and structural damage to their homes and water wells."

"We have watched and lived through this mining process. As a result we have seen a large number of changes in our overall quality of life…This has caused a major destruction of community structure. It has caused low enrollment in our schools, which resulted in the closure of our high school and our children being bused, and the near future closure of our grade school."

"The communities, families, and homes in the area where mountaintop removal is done have suffered hugely. The impact on the human and social environment must be considered."

h. Air Quality

The potential health risks of airborne dust and fumes from blasting and other mining operations were cited. During the EIS scoping process, comments were received from people living near mountaintop mines describing constant dust on their property and health concerns associated with mining. The following are excerpts from the comments.

"The company has washed our houses frequently, but the dust still prevails. Some of our people have bad irritating and aggravating sinus infections."

"One important aspect of the EIS should be to determine acute and chronic impacts on human health, focusing especially on respiratory illnesses of on-site workers as well as community residents. EPA should request photos and/or videos of dust events from citizens living in communities impacted by large area mines and mountaintop removal sites and conduct health impact studies on citizens who live or formerly lived in these communities. In addition, EPA should conduct monitoring for PM10 and PM2.5 to help determine exposure on and off-site of the mines."

"Air quality monitoring programs need to be developed for MTR operations. Significant particulate matter and other airborne pollutants are produced by barren windblown surfaces and blasting operations at MTR sites, that in many cases exceed 1000 acres. More monitoring is needed at MTR sites to quantify the type, amount and toxicity of pollutants, including their contribution to the regional air quality problem."

"One important aspect of the EIS should be to determine acute and chronic impacts on human health, focusing especially on respiratory illnesses of on-site workers as well as community residents."

i. Flooding

Statements provided during scoping of this EIS indicate concern that MTM/VF could increase flooding. The following are comment excerpts.

"What has been the extent of flooding as a result of forest removal and mining activities?"

"The potential for increased flood danger, because of removal of forest cover and smoothing of contours, as well as the risk of failure of built valley fills, must be assessed."

"Flattening a mountaintop and filling a valley will cause unknown changes to the hydrologic cycle. We don't know if valley fills cause increased flooding or increased

drought. No one knows if a filled valley will recharge groundwater at the same rate than if it's left with its original topography and plant cover."

"A growing number of hydro-geologists and scientists believe these cumulative effects may cause flash flooding and loss of life and/or property to the residents of the coal fields."

j. Land Use

Statements express the desire that mined lands are reclaimed to viable economic post-mining land uses, so that coal communities will continue long after coal resources are depleted. This issue addresses the ability of reclaimed mined land to provide an economic, social, or environmental benefit to coal field communities. The following are examples of comments received regarding concerns related to post mining land use.

"Development issues need to be thoroughly examined. What happens to a mountaintop removal site after mining? How have the economics of a human community been affected once mining activity ceases?"

"MTR will ruin WV's only renewable resource- its timber, as planting trees on MTR sites is like planting trees in concrete."

"It is quite obvious that land and environmental qualities often are increased after mining. there is diversity in the environment in that land exists which can be used by humans for something other than to look at, timber, or ride 4-wheelers."

"…the reclaimed land is much more useful to the landowner…The current permitting process includes the landowner in the decision-making process relative to his land and how it will be reclaimed."

k. Threatened and Endangered Species

Statements provided during scoping of this EIS express concern about the evaluation potential adverse impacts to threatened and endangered species. The following are excerpts from the comments.

"Immediate, long-term and cumulative impacts on endangered species or species of special concern should be conducted. Green and Pauley (1987) noted 62 records of different species of amphibians and reptiles in the southern portion of the Allegheny Plateau Region of West Virginia."

"There may be a loss of P.Clava and Club Shell Mussels buried in loose sand in Elkwater Drainage shed. Such watersheds which have endangered species of mussels must be identified."

l. Scenery and Culturally Significant Landscapes

Statements provided during scoping of this EIS indicate a concern regarding the effects of mining on scenery. Also, statements were made indicating that the mountains have cultural significance. The following are comment excerpts.

> *"The loss of scenic value should be considered site-by-site."*
>
> *"I request the EIS address the visual aesthetic impact of post mined sites."*
>
> *"Visual resources, as experienced from many units of the National Park Service, are a key part of the visitor expectation when visiting National parks. It is important that the EIS factor in potential degradation of the visual landscape, especially when operations are proposed near units of the NPS. Scars from historic surface mining upon the Appalachian landscape are prevalent. We believe it is important that the EIS examine how past mining disturbance and new mining proposals will further affect the viewshed not only post operations, but during what can often be lengthy mining operations as well."*
>
> *"This used to be beautiful land. Tall majestic mountains. Heavily forested. Streams fed by spring water you could drink, animals and plant life everywhere. The old settlers called this the land of milk and honey, a place of peace and security. Not so today."*

m. Exotic and Invasive Species

Statements provided during scoping of this EIS indicate a concern over the introduction of exotic or invasive plant species through MTM/VF activities or reclamation practices. The following are comment excerpts.

> *"Future MTR reclamation plans should be modified to address the recently signed Presidential Executive Order on Invasive Species. This order signed on February 3, 1999, states that, '...to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological and human health impacts that invasive species cause..' The implementation of this order shall eliminate the use of exotic species on MTR reclamation operations."*
>
> *"They are planting pine, locust and a grass that nothing can eat, and this is to cover up their damage to our mountains. they are planting Autumn Olive which is not permitted in West Virginia except here in our southern counties where nothing else will grow."*
>
> *"I would like the EIS to determine whether native plants and trees of all types grow and reproduce prolifically on all reclaimed MTR sites. This should include a count of the native species by type and abundance. After mining, coal companies should be required to return native species to pre-mining populations. Coal companies should be held responsible until at least 90% of native trees and plants reach maturity."*

n. Valley Fill Stability

Statements provided during scoping of this EIS indicate a concern over the long term stability of valley fills. The following are comment excerpts.

> *"Human communities are often situated below valley fills. What is the long-term stability of these structures?"*
>
> *"The risk of failure of built valley fills, must be assessed."*
>
> *"I am concerned that coal companies will be making their valley fills too short for maximum stability."*

o. Economics

Letters and verbal comments were received during scoping expressing concern over the potential for job loss if permitting or regulatory changes were implemented. Comments stated the positive economic impacts of MTM/VF on the local communities, the state, and the nation. Statements were made during scoping that local governments depend on revenues and taxes from the coal industry in order to provide police and fire protection, ambulance service, and for education. The following are comment excerpts .

> *"Local governments depend on revenues and taxes from this industry in order to provide police and fire protection, ambulance service, and for education."*
>
> *"The EIS needs to analysis the environmental and economic costs caused by mountaintop removal operation to regional and local efforts to build and expand their sustainable economic base. As one example of these efforts, herbal cooperatives are working to sustain population of native ginseng, a high-priced herb in demand world-wide for medicinal uses that is found in undisturbed mountain habitats of Appalachia."*
>
> *"An economic evaluation should be conducted within the counties most effected by MTR. this study would evaluate the long-term economic impacts of: removed mountaintops; the filling-in of hundreds of mile of stream; elimination of productive timberlands; degraded aquifers; altered scenic values and the associated loss of tourism dollars; etc."*
>
> *"The notice in the Federal Register indicates that impacts of valley fills on nearby residents are going to be addressed. If this means that socio-economic impacts are to be included, then a detailed assessment of the positive economic impacts of mountaintop mining on local communities, the state, and the nation must be included as well. If the intent of the EIS is to study the overall impacts, then annual payrolls, severance taxes, property taxes, sales taxes, indirect jobs and medical benefits of workers should be evaluated to determine the net impacts."*

"There will be no jobs for the miners in West Virginia, these people will be out of their jobs, layed off. And they won't be able to support their families. This will cause them to fall back on unemployment and eventually welfare."

p. Environmental Justice

Statements provided during scoping of this EIS indicate concerns regarding environmental justice issues. The following are comment excerpts.

"Is it any wonder what has happened in the coalfields of West Virginia? Is it any wonder that significant infrastructure development, education and school performance, improved standards of health or alternative business development are so minimal in the West Virginia coalfields compared to the rest of the country? Is it any wonder that our status as poorly educated, lacking in economic diversity, and suffering from comparable poor health relative tho the rest of the country persist today despite record coal production of some $4.4 billion dollars just last year? From the coal industry perspective, this is good business. Keep the people totally dependent on one and only one industry. Keep the people poorly educated. Keep them vulnerable to health concerns. Drive away talented young, who might effectively challenge coal practices or develop other businesses which could erode almighty coal's dominance. Keep the people desperate. That's just good business."

q. Government Efficiency

Statements provided during scoping of this EIS indicate concerns over process issues. The following are comment excerpts organized by process topics. Comments were received regarding compliance with existing laws.

"Coal companies in West Virginia have worked very hard to follow the stringent environmental regulations that EPA has established. Now, without prior notice of any kind, no permits are being issued. EPA has announced at least twice a unified Federal position and yet we still have not seen such a decision or any signed documents implementing the same".

"Need to Resolve Regulatory Inconsistencies (ie- Stream Definitions)"

"MTR is only cheap because we collectively do not write definitive enough laws or enforce uniformly and completely those laws we do have to govern the industry."

Comments were presented concerning a perceived lack of consistency of Federal requirements from state to state.

"Consistency of Valley fills with Antidegradation Policy"

"OSM should be the lead federal agency for the EIS"

"Open the process to the public via a web site"

The issues, including the excerpts provided above and raised in public and written comments, were analyzed and considered in scoping this EIS. Issues deemed "significant" in the NEPA context, and analyzed in detail in other sections of this EIS, are discussed in Chapter II.A.3.